

## Calendar No. 712

115TH CONGRESS  
2D SESSION**S. 2290**

To improve wildfire management operations and the safety of firefighters  
and communities with the best available technology.

## IN THE SENATE OF THE UNITED STATES

JANUARY 10, 2018

Ms. CANTWELL (for herself and Mr. GARDNER) introduced the following bill;  
which was read twice and referred to the Committee on Energy and Nat-  
ural Resources

DECEMBER 4, 2018

Reported by Ms. MURKOWSKI, with an amendment

[Strike out all after the enacting clause and insert the part printed in *italic*]**A BILL**

To improve wildfire management operations and the safety  
of firefighters and communities with the best available  
technology.

1 *Be it enacted by the Senate and House of Representa-*  
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS.**

4 (a) **SHORT TITLE.**—This Act may be cited as the  
5 “Wildfire Management Technology Advancement Act of  
6 2018”.

1       (b) **TABLE OF CONTENTS.**—The table of contents of  
 2 this Act is as follows:

See. 1: Short title; table of contents.  
 See. 2: Purpose.  
 See. 3: Definitions.  
 See. 4: Unmanned aircraft systems.  
 See. 5: Location systems for wildland firefighters.  
 See. 6: Fire risk maps.  
 See. 7: Real-time warnings.  
 See. 8: Smoke projections from active wildland fires.  
 See. 9: Reverse-911 telecommunications systems.  
 See. 10: Firefighter injuries database.  
 See. 11: Rapid response erosion database.  
 See. 12: Research for effectiveness and standards.  
 See. 13: Predicting where wildfires will start.  
 See. 14: Study on aircraft operating at night.  
 See. 15: Termination of authority.

3 **SEC. 2. PURPOSE.**

4       The purpose of this Act is to build on the successes  
 5 of the Federal Wildland Fire Management Policy and Na-  
 6 tional Cohesive Fire Strategy established pursuant to sec-  
 7 tion 503 of the FLAME Act of 2009 (43 U.S.C. 1748b)  
 8 (as in effect on the day before the date of enactment of  
 9 this Act), as necessary to protect the safety of firefighters  
 10 and communities from wildfires on public land and Na-  
 11 tional Forest System land created from the public domain;  
 12 by—

- 13           (1) reducing the damages, particularly to  
 14 houses, from wildfires;  
 15           (2) preparing forests and communities for  
 16 wildfires;  
 17           (3) increasing the safety of firefighters; and

1           (4) containing costs and increasing the account-  
 2           ability of decisions relating to wildland fires.

3 **SEC. 3. DEFINITIONS.**

4           In this Act:

5           (1) BURN SEVERITY MAP.—The term “burn se-  
 6           verity map” means a map created by the Secretary  
 7           concerned that depicts the changes in land-cover and  
 8           soil properties caused by a wildland fire.

9           (2) SECRETARIES.—The term “Secretaries”  
 10          means—

11                   (A) the Secretary of the Interior; and

12                   (B) the Secretary of Agriculture.

13           (3) SECRETARY CONCERNED.—The term “Sec-  
 14          retary concerned” means—

15                   (A) the Secretary of the Interior, with re-  
 16                   spect to activities under the Department of the  
 17                   Interior; and

18                   (B) the Secretary of Agriculture, with re-  
 19                   spect to activities under the Department of Ag-  
 20                   riculture.

21           (4) WILDFIRE.—The term “wildfire” means  
 22           any nonstructure fire, other than a prescribed fire,  
 23           occurring in vegetation or natural fuels on—

24                   (A) public land; or

1           (B) National Forest System land created  
2           from the public domain.

3           ~~(5) WILDLAND-URBAN INTERFACE.—~~

4           (A) IN GENERAL.—The term “wildland-  
5           urban interface” has the meaning given the  
6           term in section 101 of the Healthy Forests Res-  
7           toration Act of 2003 (16 U.S.C. 6511).

8           (B) EXCLUSION.—The term “wildland-  
9           urban interface” does not include—

10                   (i) any forest reserve not created from  
11                   the public domain; or

12                   (ii) any national grassland or land uti-  
13                   lization project administered under title III  
14                   of the Bankhead-Jones Farm Tenant Act  
15                   (7 U.S.C. 1010 et seq.).

16 **SEC. 4. UNMANNED AIRCRAFT SYSTEMS.**

17           (a) DEFINITIONS.—In this section:

18                   (1) RESTRICTED AIRSPACE.—The term “re-  
19                   stricted airspace” means an area for which the Ad-  
20                   ministrator of the Federal Aviation Administration  
21                   has established a temporary flight restriction for a  
22                   wildland fire.

23                   (2) UNMANNED AIRCRAFT; UNMANNED AIR-  
24                   CRAFT SYSTEM.—The terms “unmanned aircraft”  
25                   and “unmanned aircraft system” have the meaning

1 given those terms in section ~~331~~ of the FAA Mod-  
 2 ernization and Reform Act of 2012 (Public Law  
 3 ~~112–95~~; 49 U.S.C. 40101 note).

4 (b) OFFICIAL USE.—

5 (1) AUTHORIZATION.—Subject to paragraph  
 6 (4), Federal and State wildland firefighting agencies  
 7 (including designees of the agencies) may operate  
 8 unmanned aircraft systems in managing wildland  
 9 fires.

10 (2) DEVELOPMENT OF PROTOCOLS AND  
 11 PLANS.—Subject to the availability of appropria-  
 12 tions, not later than March 1, 2019, Federal  
 13 wildland firefighting agencies, in coordination with  
 14 State wildland firefighting agencies, shall develop  
 15 protocols and plans for the use of unmanned aircraft  
 16 systems for surveillance, initial and extended attack,  
 17 and incident management team use, as appropriate,  
 18 including for the development of real-time maps of  
 19 the location of wildland fires.

20 (3) DEADLINE.—Subject to the availability of  
 21 appropriations, not later than May 1, 2020, and in  
 22 accordance with the protocols and plans developed  
 23 under paragraph (2), the Secretaries shall begin to  
 24 equip firefighting personnel with unmanned aircraft  
 25 systems to develop real-time maps, detect spot fires,

1        assess fire behavior, develop tactical and strategic  
 2        firefighting plans, position fire resources, and en-  
 3        hance firefighter safety.

4            (4) LIMITATION ON OPERATION.—Unmanned  
 5        aircraft may only be operated under this section in  
 6        accordance with regulations and other authorities of  
 7        the Administrator of the Federal Aviation Adminis-  
 8        tration.

9        (c) UNOFFICIAL USE.—Not later than May 1, 2018,  
 10       the Secretaries, in consultation with other appropriate  
 11       Federal agencies, shall seek to reduce the number of con-  
 12       flicts between personal-use unmanned aircraft and  
 13       wildland fire operations by—

14            (1) enhancing public awareness of the potential  
 15        for those conflicts;

16            (2) establishing a protocol to notify a user of an  
 17        unmanned aircraft system operating within or adja-  
 18        cent to restricted airspace;

19            (3) employing a system to ground an unmanned  
 20        aircraft that is operating within restricted airspace;  
 21        and

22            (4) encouraging the Administrator of the Fed-  
 23        eral Aviation Administration to enforce penalties  
 24        available under section 46320 of title 49, United

1 States Code, when a user operates an unmanned air-  
 2 craft system in a restricted airspace.

3 **SEC. 5. LOCATION SYSTEMS FOR WILDLAND FIRE-**  
 4 **FIGHTERS.**

5 (a) IN GENERAL.—Subject to the availability of ap-  
 6 propriations, not later than March 1, 2019, the Secre-  
 7 taries shall jointly develop and operate a tracking system  
 8 (referred to in this section as the “system”) to remotely  
 9 locate the positions of fire resources assigned to Federal  
 10 Type 1 Wildland Fire Incident Management Teams.

11 (b) REQUIREMENTS.—The system shall—

12 (1) use technology available to the Secretaries  
 13 to remotely track the location of an active resource,  
 14 such as a Global Positioning System;

15 (2) depict the location of each fire resource on  
 16 the maps developed under section 4(b)(2); and

17 (3) operate continuously during the period any  
 18 firefighting personnel are assigned to the applicable  
 19 Federal wildland fire.

20 (c) OPERATION.—The Secretary concerned shall—

21 (1) operate the system during a wildland fire to  
 22 increase—

23 (A) the safety of employees, officers, and  
 24 contractors; and

1                   ~~(B)~~ the effectiveness of the management of  
 2                   the wildland fire; and  
 3                   ~~(2)~~ conduct training and maintain a culture  
 4                   such that an employee, officer, or contractor shall  
 5                   not rely on the system for safety.

6 **SEC. 6. FIRE RISK MAPS.**

7           Subject to the availability of appropriations, the Sec-  
 8   retaries, in consultation with other appropriate Federal  
 9   agencies, may assist a State, unit of local government, or  
 10 nongovernmental organization that is seeking technical or  
 11 financial support to develop or refine maps, at a scale and  
 12 resolution to be useful for local governments, that depict  
 13 the relative risk of wildfires for land in the wildland-urban  
 14 interface.

15 **SEC. 7. REAL-TIME WARNINGS.**

16       ~~(a) WILDLAND FIRE PROTOCOL.—~~The Secretaries  
 17 shall ensure that the activities conducted by the Secre-  
 18 taries relating to wildland fire safely achieve reasonable  
 19 objectives while minimizing firefighter exposure to the low-  
 20 est level necessary to accomplish those objectives.

21       ~~(b) WILDFIRE DECISION SUPPORT SYSTEM.—~~

22           ~~(1) IN GENERAL.—~~The Secretaries shall estab-  
 23   lish a system to track and monitor decisions made  
 24   when managing a wildfire.



1           (2) COMPONENTS OF THE SYSTEM.—The sys-  
 2       tem established under paragraph (1) shall be able to  
 3       alert the Secretaries if—

4                   (A) unusual costs are incurred;

5                   (B) an action is undertaken that would  
 6       likely endanger the safety of a firefighter; or

7                   (C) a decision regarding the management  
 8       of a wildfire deviates from—

9                           (i) a protocol established by the Secre-  
 10       taries, including the requirement under  
 11       subsection (a); or

12                           (ii) a spatial fire management plan or  
 13       fire management plan of the Secretary  
 14       concerned.

15 **SEC. 8. SMOKE PROJECTIONS FROM ACTIVE WILDLAND**  
 16 **FIRES.**

17       (a) IN GENERAL.—The Secretaries shall establish a  
 18       program, to be known as the “Interagency Wildland Fire  
 19       Air Quality Response Program”, under which the Sec-  
 20       retary concerned—

21                   (1) to the maximum extent practicable, shall as-  
 22       sign a team of air resource advisors to a type 1 inci-  
 23       dent management team managing a wildland fire;  
 24       and

1           (2) may assign a team of air resource advisors  
 2           to a type 2 incident management team managing a  
 3           wildland fire.

4           (b) DUTY.—An air resource advisor assigned under  
 5 subsection (a) shall use a model to project—

6           (1) how much smoke will be generated from the  
 7           wildland fire; and

8           (2) where the impacts of the smoke will occur.

9           (c) PUBLIC DISSEMINATION.—At least once each  
 10 day, the Secretaries shall make available to the public the  
 11 projections generated under subsection (b).

12 **SEC. 9. REVERSE-911 TELECOMMUNICATIONS SYSTEMS.**

13           (a) IN GENERAL.—The Administrator of the Federal  
 14 Emergency Management Agency (referred to in this sec-  
 15 tion as the “Administrator”) may use funds appropriated  
 16 for the emergency management performance grant pro-  
 17 gram under section 662 of the Post-Katrina Emergency  
 18 Management Reform Act of 2006 (6 U.S.C. 762) to make  
 19 grants to States to provide funding to communities on the  
 20 list of at-risk communities developed pursuant to title IV  
 21 of the Department of the Interior and Related Appropria-  
 22 tions Act, 2001 (Public Law 106–291; 114 Stat. 1006)  
 23 (referred to in this section as “at-risk communities”) for  
 24 the cost-shared installation of a reverse-911 system.

1       (b) ~~NON-FEDERAL SHARE.~~—The non-Federal share  
 2 of the cost of installing a reverse-911 system using a grant  
 3 under this section shall be 50 percent.

4       (c) ~~OUTCOME-BASED PERFORMANCE MEASURE.~~—  
 5 Beginning in fiscal year 2019, as part of the budget sub-  
 6 mission of the President, the Administrator shall report  
 7 the percentage of at-risk communities that possess a re-  
 8 verse-911 system.

9       **SEC. 10. FIREFIGHTER INJURIES DATABASE.**

10       (a) ~~IN GENERAL.~~—Section 9(a) of the Federal Fire  
 11 Prevention and Control Act of 1974 (15 U.S.C. 2208(a))  
 12 is amended—

13               (1) in paragraph (2), by inserting “, categorized  
 14 by the type of fire” after “such injuries and deaths”;

15               (2) in paragraph (3), by striking “activities;”  
 16 and inserting “activities, including—

17                       “(A) all injuries sustained by a firefighter  
 18 and treated by a doctor, categorized by the type  
 19 of firefighter;

20                       “(B) all deaths sustained while undergoing  
 21 a pack test or while preparing for a work capac-  
 22 ity;

23                       “(C) all injuries or deaths resulting from  
 24 vehicle accidents; and

1           “(D) all injuries or deaths resulting from  
2           aircraft crashes;”;

3           (3) in paragraph (7), by striking “and” after  
4           the semicolon at the end;

5           (4) by redesignating paragraph (8) as para-  
6           graph (10); and

7           (5) by inserting after paragraph (7) the fol-  
8           lowing:

9           “(8) the total costs incurred in the management  
10          of each wildland fire managed by a Type 1 or 2 Inci-  
11          dent Management Team;

12          “(9) the total number of structures lost during  
13          wildfires; and”.

14          (b) USE OF EXISTING DATA GATHERING AND ANAL-  
15          YSIS ORGANIZATIONS.—Section 9(b)(3) of the Federal  
16          Fire Prevention and Control Act of 1974 (15 U.S.C.  
17          2208(b)(3)) is amended by inserting “, including the Cen-  
18          ter for Firefighter Injury Research and Safety Trends”  
19          after “public and private”.

20          (c) MEDICAL PRIVACY OF FIREFIGHTERS.—Section  
21          9 of the Federal Fire Prevention and Control Act of 1974  
22          (15 U.S.C. 2208) is amended by adding at the end the  
23          following:

24          “(c) MEDICAL PRIVACY OF FIREFIGHTERS.—The  
25          collection, storage, and transfer of any medical data col-

1 lected under this section shall be conducted in accordance  
2 with—

3 “(1) the privacy regulations promulgated under  
4 section 264(c) of the Health Insurance Portability  
5 and Accountability Act of 1996 (42 U.S.C. 1320d–  
6 2 note; Public Law 104–191); and

7 “(2) other applicable regulations, including  
8 parts 160, 162, and 164 of title 45, Code of Federal  
9 Regulations (as in effect on the date of enactment  
10 of this subsection).”.

11 **SEC. 11. RAPID RESPONSE EROSION DATABASE.**

12 (a) IN GENERAL.—The Secretaries, in coordination  
13 with the Administrator of the National Aeronautics and  
14 Space Administration, shall establish and maintain a data-  
15 base, to be known as the “Rapid Response Erosion Data-  
16 base” (referred to in this section as the “Database”).

17 (b) OPEN-SOURCE DATABASE.—

18 (1) AVAILABILITY.—The Secretaries shall make  
19 the Database (including the original source code)—

20 (A) web-based; and

21 (B) available without charge.

22 (2) COMPONENTS.—The Database shall provide  
23 for—

1           (A) the automatic incorporation into a  
 2           burn severity map of spatial data relating to  
 3           vegetation, soils, and elevation; and

4           (B) the generation of a composite map  
 5           that can be used by the Secretary concerned to  
 6           model the effectiveness of treatments in the  
 7           burned area to prevent flooding, erosion, and  
 8           landslides under a range of weather scenarios.

9       (c) USE.—The Secretary concerned shall use, to the  
 10       maximum extent practicable, the Database in developing  
 11       recommendations for emergency stabilization treatments  
 12       or modifications to drainage structures to protect values  
 13       at-risk following a large wildland fire.

14       **SEC. 12. RESEARCH FOR EFFECTIVENESS AND STANDARDS.**

15       (a) IN GENERAL.—To assess the effectiveness of fire  
 16       protection strategies, the Secretary of Commerce, acting  
 17       through the Director of the National Institute of Stand-  
 18       ards and Technology (referred to in this section as the  
 19       “Secretary”), shall—

20           (1) establish a national team to collect data fol-  
 21           lowing wildfires in the wildland-urban interface; and

22           (2) implement a research plan to link economic  
 23           outcomes with wildfire mitigation actions by—

24               (A) understanding the relative contribution  
 25               of fuels configuration, weather, and terrain;

1                   (B) quantifying the cost of providing the  
2                   current level of fire protection;

3                   (C) understanding the losses resulting  
4                   from wildfires in the wildland-urban interface;  
5                   and

6                   (D) using performance metrics to assess  
7                   the effectiveness of current designs, materials,  
8                   and technologies.

9           (b) ~~RESPONSE-TIME THRESHOLD.~~—The Secretary  
10 shall develop optimal time-to-response standards for a  
11 firefighting agency to reach a wildfire in the wildland-  
12 urban interface.

13           (c) ~~COORDINATION; PARTNERSHIPS.~~—In carrying  
14 out this section, the Secretary shall—

15                   (1) coordinate with the Secretaries; and

16                   (2) partner with administrators of firefighting  
17 agencies that protect communities from wildfires.

18 **SEC. 13. PREDICTING WHERE WILDFIRES WILL START.**

19           (a) ~~IN GENERAL.~~—The Secretaries, in coordination  
20 with the Administrator of the National Aeronautics and  
21 Space Administration, acting through the Director of the  
22 Jet Propulsion Laboratory, and the Secretary of Energy,  
23 through the capabilities and assets located at the National  
24 Laboratories, shall establish and maintain a system to pre-  
25 dict the locations of future wildfires for fire-prone areas

1 of the United States, to be known as the “Fire Danger  
2 Assessment System” (referred to in this section as the  
3 “System”).

4 (b) COMPONENTS.—The System shall use a combina-  
5 tion of soil moisture levels, precipitation patterns, topog-  
6 raphy, fuels growth and availability, ignition risks, and  
7 temperatures to calculate probabilities of wildfires igniting  
8 or burning in fire-prone areas of the United States.

9 (c) USE.—Not later than May 1, 2019, the Secre-  
10 taries shall use the System for purposes of developing any  
11 wildland fire potential forecasts.

#### 12 **SEC. 14. STUDY ON AIRCRAFT OPERATING AT NIGHT.**

13 (a) STUDY.—Not later than September 30, 2019, the  
14 Secretaries shall conduct a study to determine the feasi-  
15 bility of operating aircraft at night when managing  
16 wildland fires.

17 (b) PARTNERSHIPS.—In carrying out this section, the  
18 Secretary may enter into a cooperative agreement with the  
19 Center of Excellence for Advanced Technology Aerial Fire-  
20 fighting.

#### 21 **SEC. 15. TERMINATION OF AUTHORITY.**

22 The authority provided by this Act terminates on the  
23 date that is 10 years after the date of enactment of this  
24 Act.



1 **SECTION 1. SHORT TITLE.**

2       *This Act may be cited as the “Wildfire Management*  
 3 *Technology Advancement Act of 2018”.*

4 **SEC. 2. PURPOSE.**

5       *The purpose of this Act is to promote the use of the*  
 6 *best available technology to enhance the effective and cost-*  
 7 *efficient response to wildfires—*

8               *(1) to meet applicable protection objectives; and*

9               *(2) to increase the safety of—*

10                       *(A) firefighters; and*

11                       *(B) the public.*

12 **SEC. 3. DEFINITIONS.**

13       *In this Act:*

14               *(1) SECRETARIES.—The term “Secretaries”*  
 15 *means—*

16                       *(A) the Secretary of Agriculture; and*

17                       *(B) the Secretary of the Interior.*

18               *(2) SECRETARY CONCERNED.—The term “Sec-*  
 19 *retary concerned” means—*

20                       *(A) the Secretary of Agriculture, with re-*  
 21 *spect to activities under the Department of Agri-*  
 22 *culture; and*

23                       *(B) the Secretary of the Interior, with re-*  
 24 *spect to activities under the Department of the*  
 25 *Interior.*

1 **SEC. 4. UNMANNED AIRCRAFT SYSTEMS.**

2       (a) *DEFINITIONS.*—*In this section, the terms “un-*  
 3 *manned aircraft” and “unmanned aircraft system” have*  
 4 *the meanings given those terms in section 331 of the FAA*  
 5 *Modernization and Reform Act of 2012 (49 U.S.C. 40101*  
 6 *note; Public Law 112–95).*

7       (b) *ESTABLISHMENT OF PROGRAM.*—*Not later than*  
 8 *180 days after the date of enactment of this Act, the Sec-*  
 9 *retary of the Interior, in consultation with the Secretary*  
 10 *of Agriculture, shall establish a research, development, and*  
 11 *testing program, or expand an applicable existing program,*  
 12 *to assess unmanned aircraft system technologies, including*  
 13 *optionally piloted aircraft, across the full range of wildland*  
 14 *fire management operations in order to accelerate the de-*  
 15 *ployment and integration of those technologies into the op-*  
 16 *erations of the Secretaries.*

17       (c) *EXPANDING USE OF UNMANNED AIRCRAFT SYS-*  
 18 *TEMS ON WILDFIRES.*—*Not later than 1 year after the date*  
 19 *of enactment of this Act, the Secretaries, in coordination*  
 20 *with State wildland firefighting agencies and other relevant*  
 21 *Federal agencies, shall enter into an agreement under which*  
 22 *the Secretaries shall develop consistent protocols and plans*  
 23 *for the use on wildland fires of unmanned aircraft system*  
 24 *technologies, including for the development of real-time*  
 25 *maps of the location of wildland fires.*

1 **SEC. 5. LOCATION SYSTEMS FOR WILDLAND FIREFIGHTERS.**

2       (a) *IN GENERAL.*—Not later than 1 year after the date  
3 of enactment of this Act, subject to the availability of appro-  
4 priations, the Secretaries, in coordination with State  
5 wildland firefighting agencies, shall jointly develop and op-  
6 erate a tracking system (referred to in this section as the  
7 “system”) to remotely locate the positions of fire resources,  
8 including, at a minimum, any fire resources assigned to  
9 Federal type 1 wildland fire incident management teams.

10       (b) *REQUIREMENTS.*—The system shall—

11               (1) use technology available to the Secretaries to  
12 remotely track the location of an active resource, such  
13 as a Global Positioning System;

14               (2) depict the location of each fire resource on  
15 the applicable maps developed under section 4(c); and

16               (3) operate continuously during the period for  
17 which any firefighting personnel are assigned to the  
18 applicable Federal wildland fire.

19       (c) *OPERATION.*—The Secretary concerned shall—

20               (1) before commencing operation of the system—

21                       (A) conduct not fewer than 2 pilot projects  
22 relating to the system; and

23                       (B) review the results of those pilot projects;

24               and

1           (2) *conduct training, and maintain a culture,*  
 2           *such that an employee, officer, or contractor shall not*  
 3           *rely on the system for safety.*

4 **SEC. 6. WILDLAND FIRE DECISION SUPPORT.**

5           (a) *PROTOCOL.—To the maximum extent practicable,*  
 6           *the Secretaries shall ensure that wildland fire management*  
 7           *activities conducted by the Secretaries, or conducted jointly*  
 8           *by the Secretaries and State wildland firefighting agencies,*  
 9           *achieve compliance with applicable incident management*  
 10          *objectives in a manner that—*

11           (1) *minimizes firefighter exposure to the lowest*  
 12          *level necessary; and*

13           (2) *reduces overall costs of wildfire incidents.*

14          (b) *WILDFIRE DECISION SUPPORT SYSTEM.—*

15           (1) *IN GENERAL.—The Secretaries, in coordina-*  
 16          *tion with State wildland firefighting agencies, shall*  
 17          *establish a system to track and monitor decisions*  
 18          *made by the Secretaries or State wildland firefighting*  
 19          *agencies in managing wildfires.*

20           (2) *COMPONENTS.—The system established under*  
 21          *paragraph (1) shall be able to alert the Secretaries*  
 22          *if—*

23           (A) *unusual costs are incurred;*

24           (B) *an action to be carried out would like-*  
 25          *ly—*

1                   (i) endanger the safety of a firefighter;

2                   or

3                   (ii) be ineffective in meeting an appli-  
4                   cable suppression or protection goal; or

5                   (C) a decision regarding the management of  
6                   a wildfire deviates from—

7                   (i) an applicable protocol established  
8                   by the Secretaries, including the require-  
9                   ment under subsection (a); or

10                  (ii) an applicable spatial fire manage-  
11                  ment plan or fire management plan of the  
12                  Secretary concerned.

13 **SEC. 7. SMOKE PROJECTIONS FROM ACTIVE WILDLAND**  
14 **FIRES.**

15           The Secretaries shall establish a program, to be known  
16 as the “Interagency Wildland Fire Air Quality Response  
17 Program”, under which the Secretary concerned—

18                   (1) to the maximum extent practicable, shall as-  
19                   sign a team of air resource advisors to a type 1 inci-  
20                   dent management team managing a wildland fire;  
21                   and

22                   (2) may assign a team of air resource advisors  
23                   to a type 2 incident management team managing a  
24                   wildland fire.

1 **SEC. 8. FIREFIGHTER INJURIES DATABASE.**

2 (a) *IN GENERAL.*—Section 9(a) of the Federal Fire  
3 Prevention and Control Act of 1974 (15 U.S.C. 2208(a))  
4 is amended—

5 (1) in paragraph (2), by inserting “, categorized  
6 by the type of fire” after “such injuries and deaths”;  
7 and

8 (2) in paragraph (3), by striking “activities;”  
9 and inserting the following: “activities, including—

10 “(A) all injuries sustained by a firefighter  
11 and treated by a doctor, categorized by the type  
12 of firefighter;

13 “(B) all deaths sustained while undergoing  
14 a pack test or preparing for a work capacity;

15 “(C) all injuries or deaths resulting from  
16 vehicle accidents; and

17 “(D) all injuries or deaths resulting from  
18 aircraft crashes;”.

19 (b) *USE OF EXISTING DATA GATHERING AND ANAL-*  
20 *YSIS ORGANIZATIONS.*—Section 9(b)(3) of the Federal Fire  
21 Prevention and Control Act of 1974 (15 U.S.C. 2208(b)(3))  
22 is amended, by inserting “, including the Center for Fire-  
23 fighter Injury Research and Safety Trends” after “public  
24 and private”.

1       (c) *MEDICAL PRIVACY OF FIREFIGHTERS.*—Section 9  
 2   of the Federal Fire Prevention and Control Act of 1974 (15  
 3   U.S.C. 2208) is amended by adding at the end the following:

4       “(e) *MEDICAL PRIVACY OF FIREFIGHTERS.*—The col-  
 5   lection, storage, and transfer of any medical data collected  
 6   under this section shall be conducted in accordance with—

7               “(1) the privacy regulations promulgated under  
 8       section 264(c) of the Health Insurance Portability  
 9       and Accountability Act of 1996 (42 U.S.C. 1320d-2  
 10      note; Public Law 104-191); and

11              “(2) other applicable regulations, including parts  
 12      160, 162, and 164 of title 45, Code of Federal Regula-  
 13      tions (as in effect on the date of enactment of this  
 14      subsection).”.

15   **SEC. 9. RAPID RESPONSE EROSION DATABASE.**

16       (a) *IN GENERAL.*—The Secretaries, in consultation  
 17   with the Administrator of the National Aeronautics and  
 18   Space Administration, shall establish and maintain a data-  
 19   base, to be known as the “Rapid Response Erosion Data-  
 20   base” (referred to in this section as the “Database”).

21       (b) *OPEN-SOURCE DATABASE.*—

22              (1) *AVAILABILITY.*—The Secretaries shall make  
 23      the Database (including the original source code)—

24                      (A) web-based; and

25                      (B) available without charge.

1           (2) *COMPONENTS.*—*The Database shall provide*  
 2     *for—*

3                     (A) *the automatic incorporation of spatial*  
 4             *data relating to vegetation, soils, and elevation*  
 5             *into an applicable map created by the Secretary*  
 6             *concerned that depicts the changes in land-cover*  
 7             *and soil properties caused by a wildland fire;*  
 8             *and*

9                     (B) *the generation of a composite map that*  
 10            *can be used by the Secretary concerned to model*  
 11            *the effectiveness of treatments in the burned area*  
 12            *to prevent flooding, erosion, and landslides under*  
 13            *a range of weather scenarios.*

14           (c) *USE.*—*The Secretary concerned shall use the Data-*  
 15     *base, as applicable, in developing recommendations for*  
 16     *emergency stabilization treatments or modifications to*  
 17     *drainage structures to protect values-at-risk following a*  
 18     *wildland fire.*

19           (d) *COORDINATION.*—*The Secretaries may share the*  
 20     *Database, and any results generated in using the Database,*  
 21     *with any State or unit of local government.*

22     **SEC. 10. PREDICTING WHERE WILDFIRES WILL START.**

23           (a) *IN GENERAL.*—*The Secretaries, in consultation*  
 24     *with the Administrator of the National Aeronautics and*  
 25     *Space Administration and the Secretary of Energy, through*



1 *the capabilities and assets located at the National Labora-*  
2 *tories, shall establish and maintain a system to predict the*  
3 *locations of future wildfires for fire-prone areas of the*  
4 *United States.*

5 (b) *COOPERATION; COMPONENTS.—The system estab-*  
6 *lished under subsection (a) shall—*

7 (1) *be based on, and enhance, similar systems in*  
8 *existence on the date of enactment of this Act, includ-*  
9 *ing the Fire Danger Assessment System; and*

10 (2) *use a combination of soil moisture levels, pre-*  
11 *cipitation patterns, topography, fuels growth and*  
12 *availability, ignition risks, and temperatures to cal-*  
13 *culate probabilities of wildfires igniting or burning in*  
14 *fire-prone areas of the United States.*

15 (c) *USE IN FORECASTS.—Not later than 1 year after*  
16 *the date of enactment of this Act, the Secretaries shall use*  
17 *the system established under subsection (a), to the max-*  
18 *imum extent practicable, for purposes of developing any*  
19 *wildland fire potential forecasts.*

20 (d) *COORDINATION.—The Secretaries may share the*  
21 *system established under subsection (a), and any results*  
22 *generated in using the system, with any State or unit of*  
23 *local government.*

1 **SEC. 11. STUDY ON AIRCRAFT OPERATING AT NIGHT.**

2       (a) *STUDY.*—Not later than 1 year after the date of  
3 enactment of this Act, subject to the availability of appro-  
4 priations, the Secretaries shall conduct a study to determine  
5 the feasibility of operating aircraft at night when managing  
6 wildland fires.

7       (b) *PARTNERSHIPS.*—In conducting the study under  
8 subsection (a), the Secretaries may enter into a partnership  
9 with any State center of excellence with experience relating  
10 to aerial firefighting.

11 **SEC. 12. TERMINATION OF AUTHORITY.**

12       The authority provided by this Act terminates on the  
13 date that is 10 years after the date of enactment of this  
14 Act.



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**S. 2290**

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## A BILL

To improve wildfire management operations and the safety of firefighters and communities with the best available technology.

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DECEMBER 4, 2018

Reported with an amendment